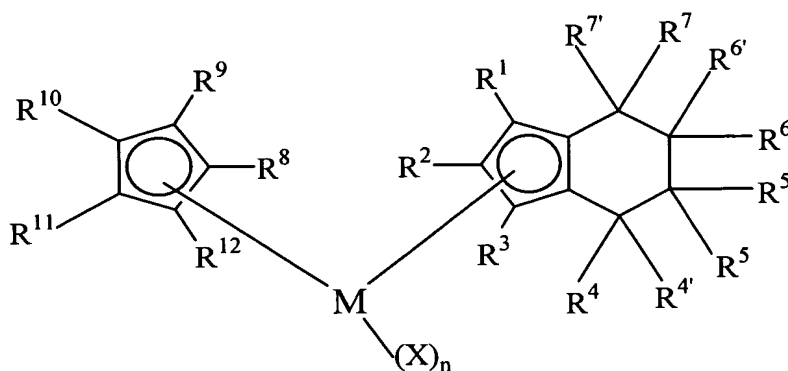# CLASS OF METALLOCENES AND
METHOD OF PRODUCING POLYETHYLENE

ABSTRACT

The invention provides a catalyst system and a method of making polyethylene using the catalyst system, the method comprising combining ethylene; an activator; and a metallocene catalyst compound; wherein in one embodiment the metallocene catalyst compound is selected from:

wherein M is a Group 4 atom; X is a leaving group; n is an integer from 0 to 3; and R^1 to R^{12} are independently selected from hydrides, halogens, hydroxy, C_1 to C_6 alkoxys, C_1 to C_6 alkenyls, and C_1 to C_{10} alkyls; characterized in that when the comonomer is 1-hexene, and the mole ratio of 1-hexene to ethylene combined is varied between 0.015 to 0.05, the density of the resultant polyethylene changes by less than 5 % and the I_{21}/I_2 varies from 10 to 150.